Midwest Update:
Energy Code Adoption & Compliance

Ian Blanding

Michigan Compliance Collaborative

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MIDWEST ENERGY EFFICIENCY ALLIANCE

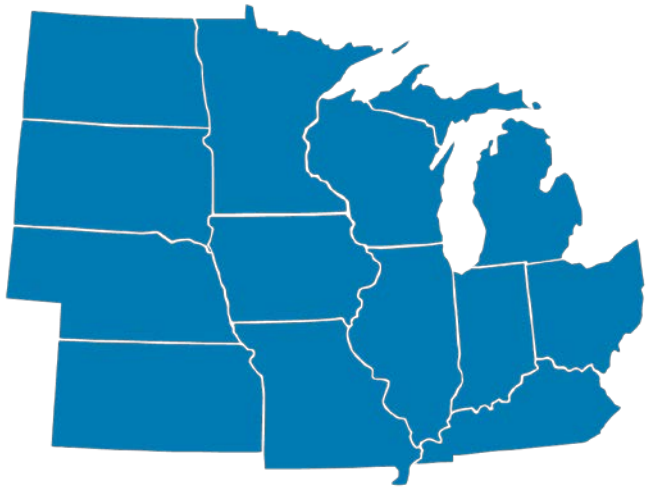
About MEEA

The Trusted Source on Energy Efficiency

We are a nonprofit membership organization with 160+ members, including:

- Utilities
- Research institutions and advocacy organizations
- State and local governments
- Energy efficiency-related businesses

As the key resource and champion for energy efficiency in the Midwest, MEEA helps a diverse range of stakeholders understand And implement cost-effective energy efficiency strategies that provide economic and environmental benefits.



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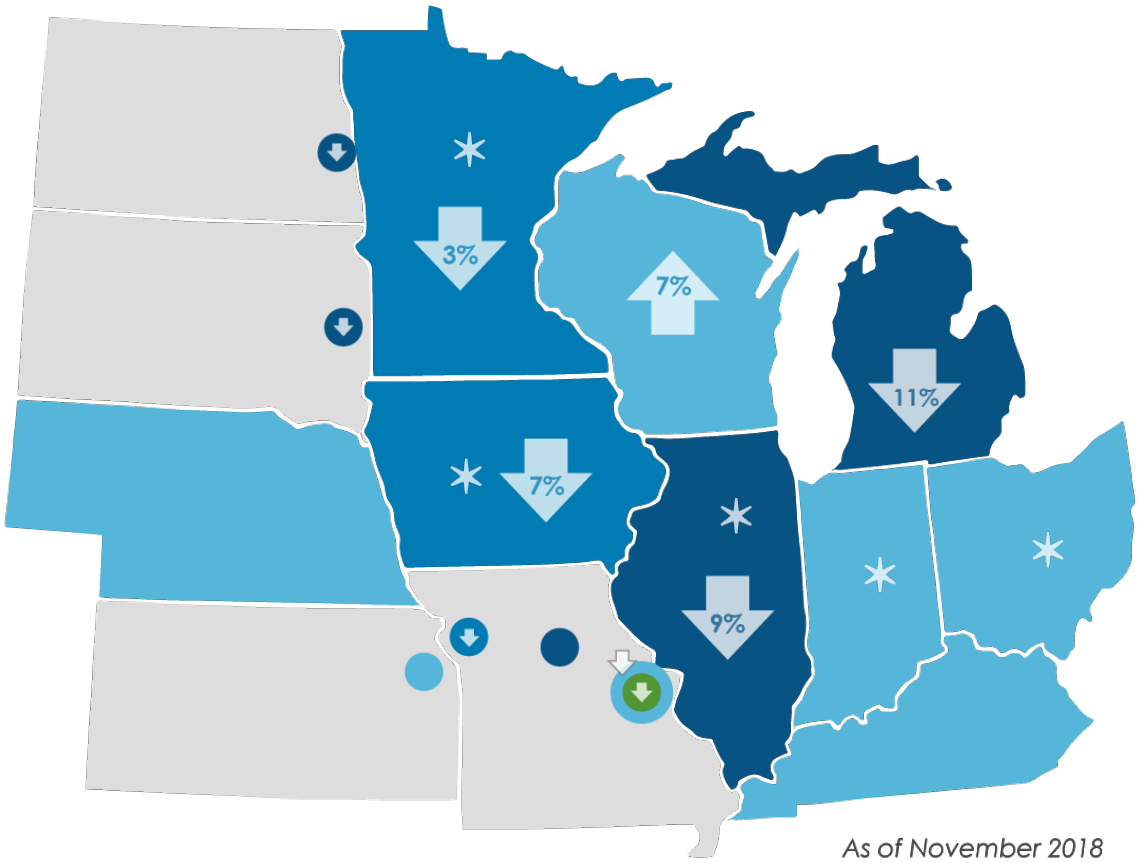
Residential Code

Amended Code vs. Updated Code Levels



Percentage change is based on EUI of adopted code

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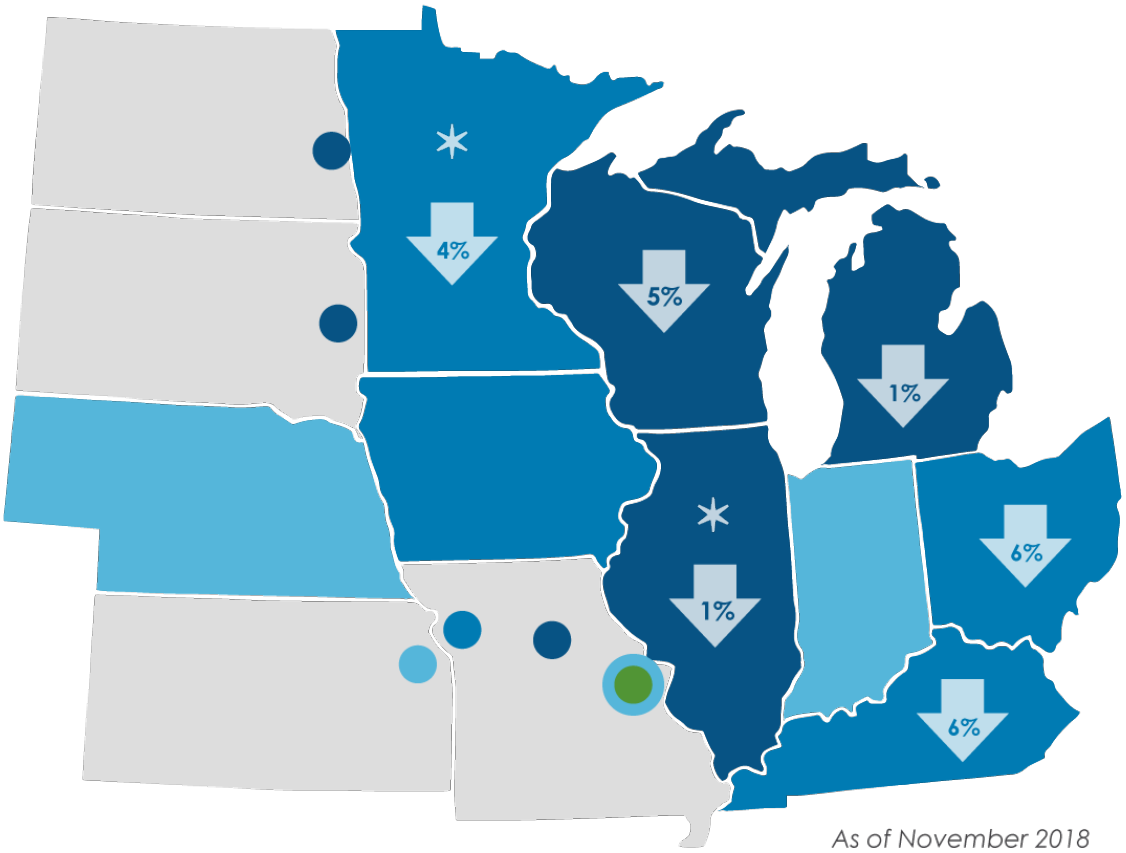
Commercial Code

Amended Code vs. Updated Code Level



Key

- No mandatory code
- 2009 IECC
- 2012 IECC
- 2015 IECC
- 2018 IECC
- Less efficient than referenced code
- More efficient than referenced code
- Code update in progress

As of November 2018

Percentage change is based on EUI of adopted code

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Code Compliance
Opportunities

- Code Compliance Collaborative:
  - Group of stakeholders to identify and tackle obstacles to improve energy code compliance
- Energy Code Compliance Study
  - In-field research to better understand energy code compliance and implementation
- Training and Education
  - Local or statewide programs to improve energy code understanding and compliance

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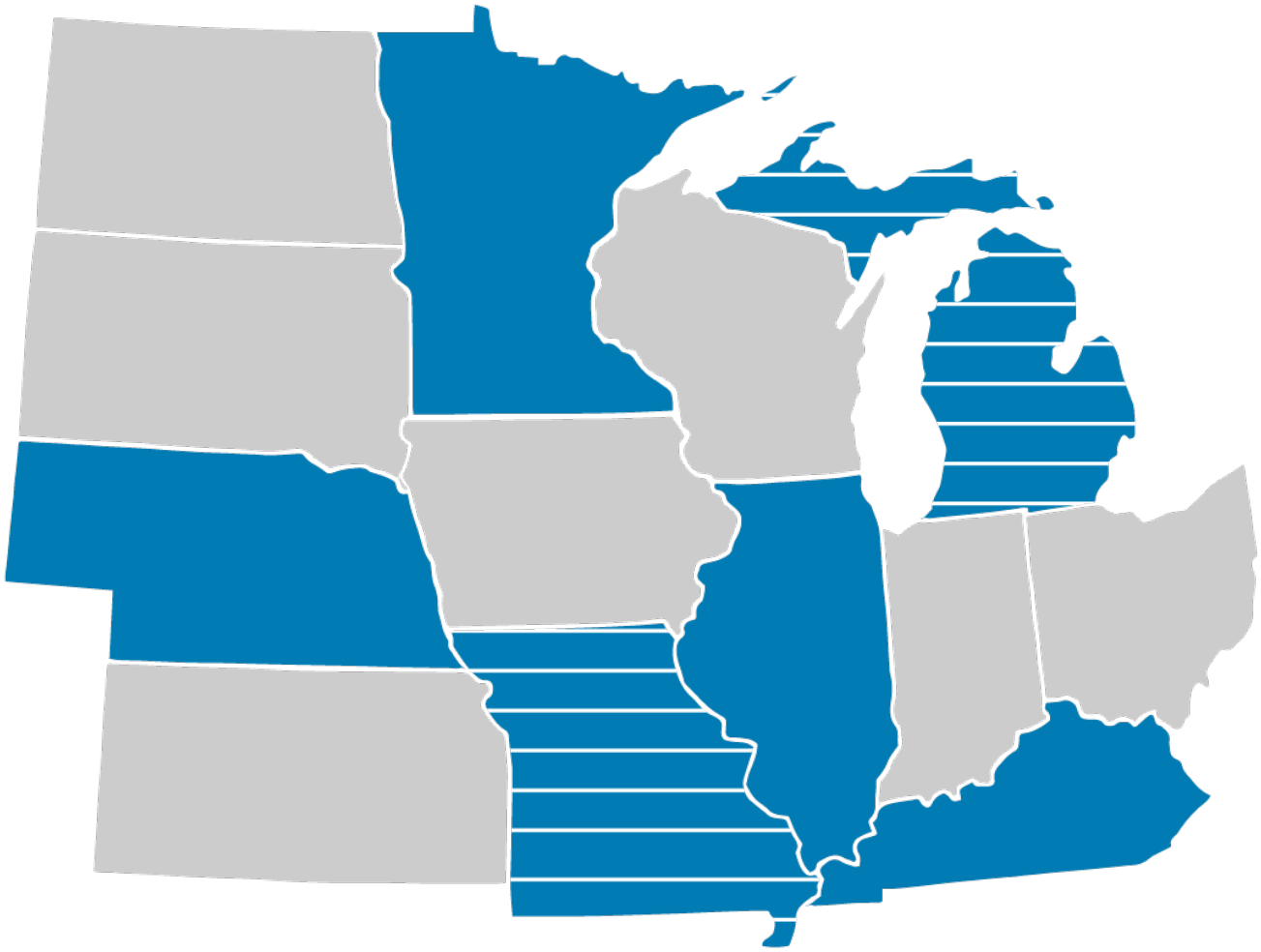
Collaboratives

Map of Midwest



Existing

In development

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DOE Residential Field Studies

Program Design

1. Residential Baseline Study
   - Basis for measuring improvement
   - Identifies specific compliance improvement opportunities
2. Integrated Compliance Support Program
   - Develop a suite of programs targeted at identified compliance improvement opportunities
3. Post Program Study
   - Positive results from Kentucky

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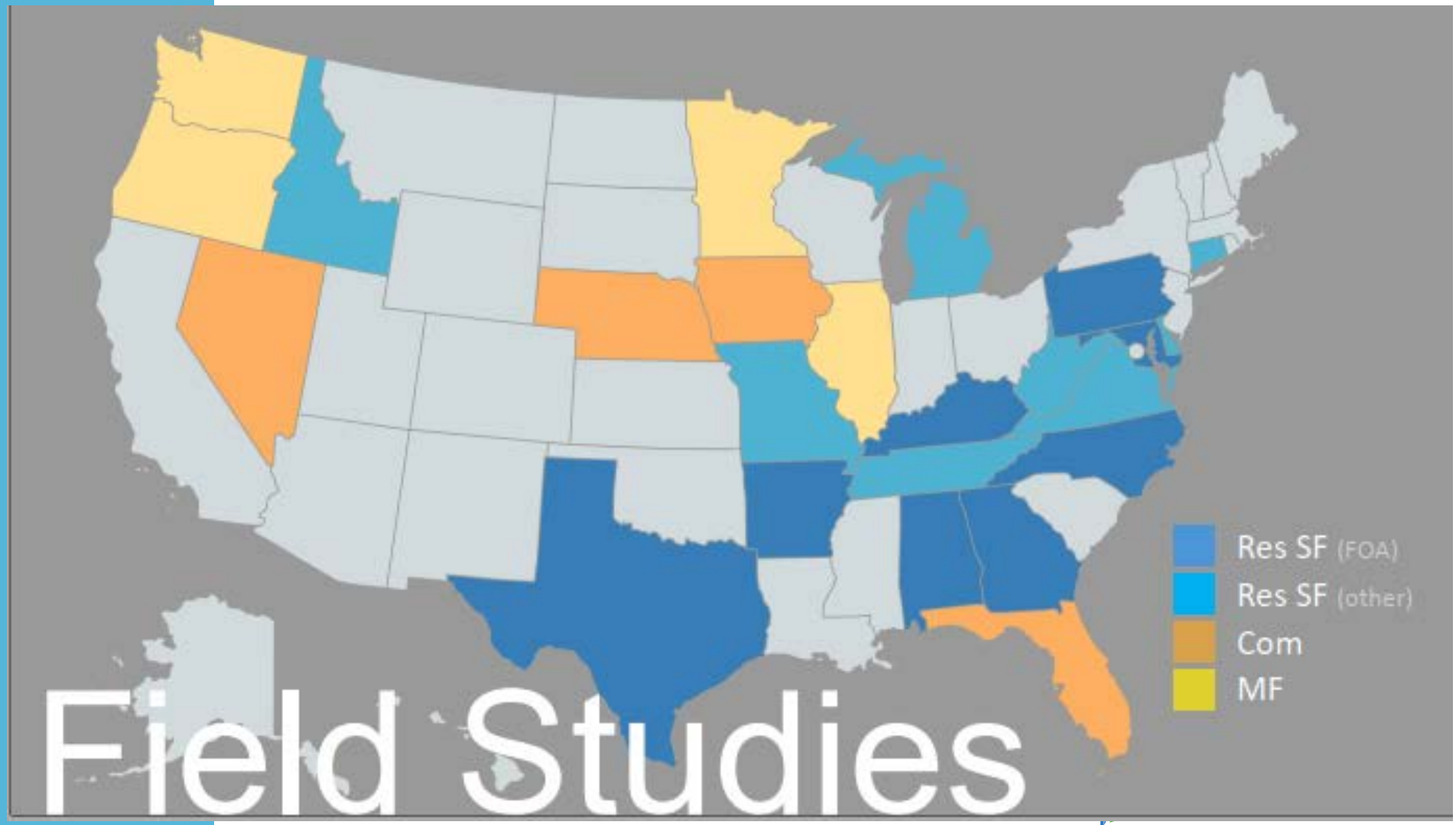
Code Compliance Studies

Map of US



Education and Training

Ameren Missouri Example

- Ameren MO is funding a 3-year residential code compliance improvement program
- Training influenced by baseline study
- Program Elements
  - Compliance Collaborative
  - Circuit Rider
  - In-Person Training

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Thank you!

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What Is The Energy Code?

- Energy Codes are a set of rules that govern the energy use of a building through mandated building practices & components
- Minimum Energy Efficiency Requirements
  - "Worst home that can be built"
- National Model Codes developed by International Code Council and ASHRAE
  - Updated every 3 years (level of improvement varies)
  - Current edition released in 2015
- States/Municipalities Adopt and Enforce the Code

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History of Energy Codes

- First codes established in 1975
- Code has gotten more stringent over time, with new codes being more than 50% more efficient than the first codes

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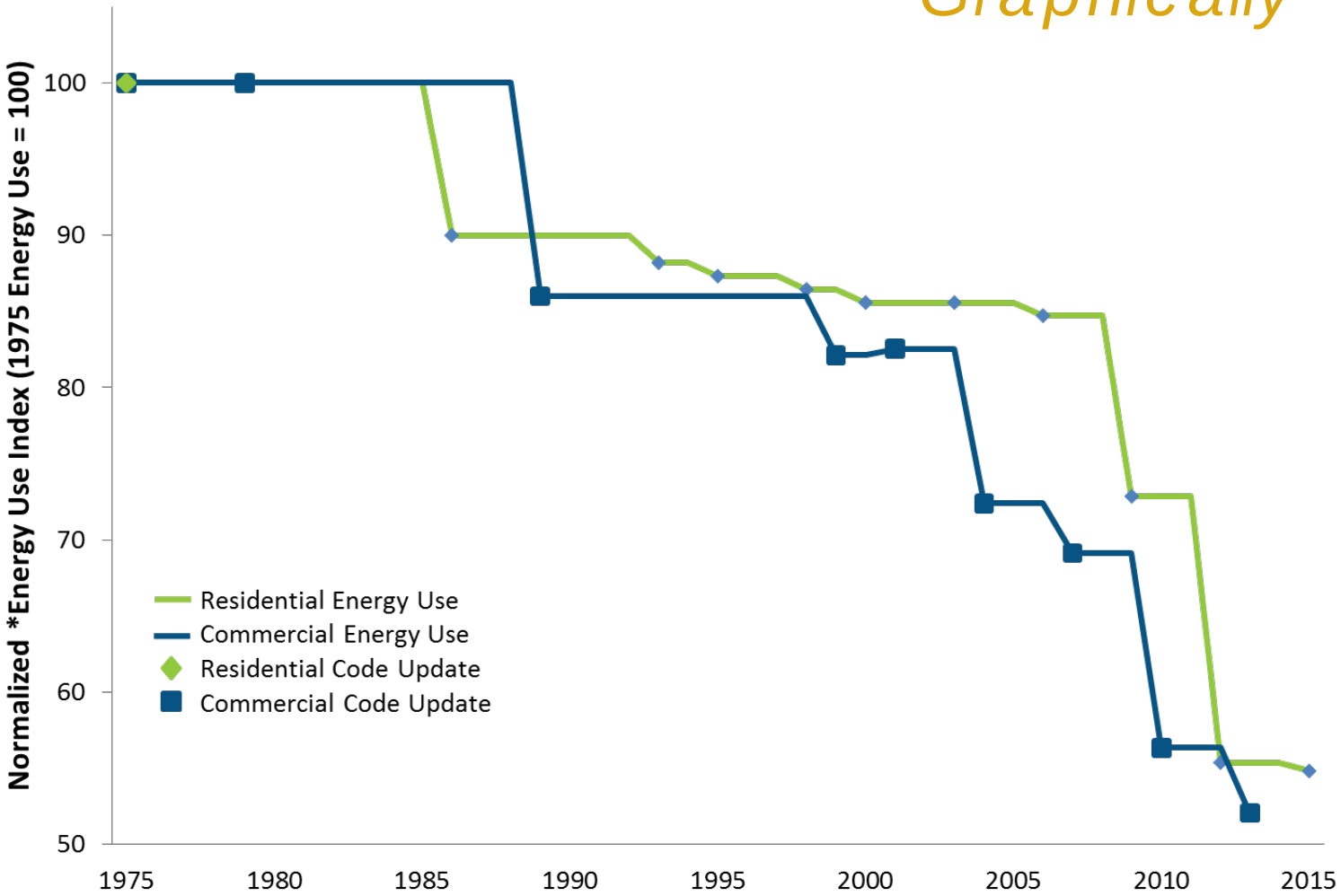
History of Energy Codes

Graphically



* Energy Use Index: National average energy use by building type and size.

Source: MEEA based on PNNL Analysis

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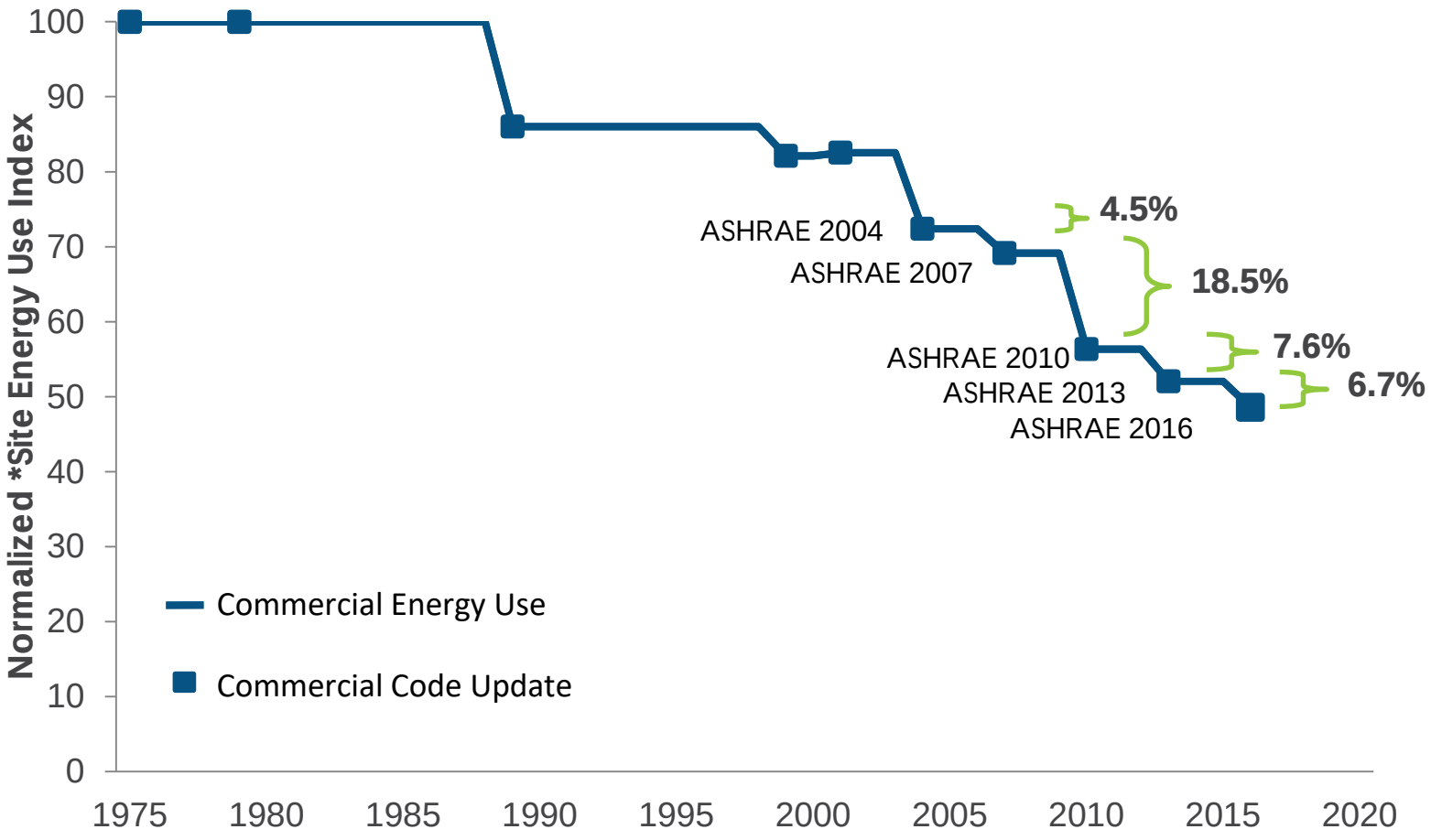
Commercial Building Energy Code

Energy Use as Code Improves (1975-2016)



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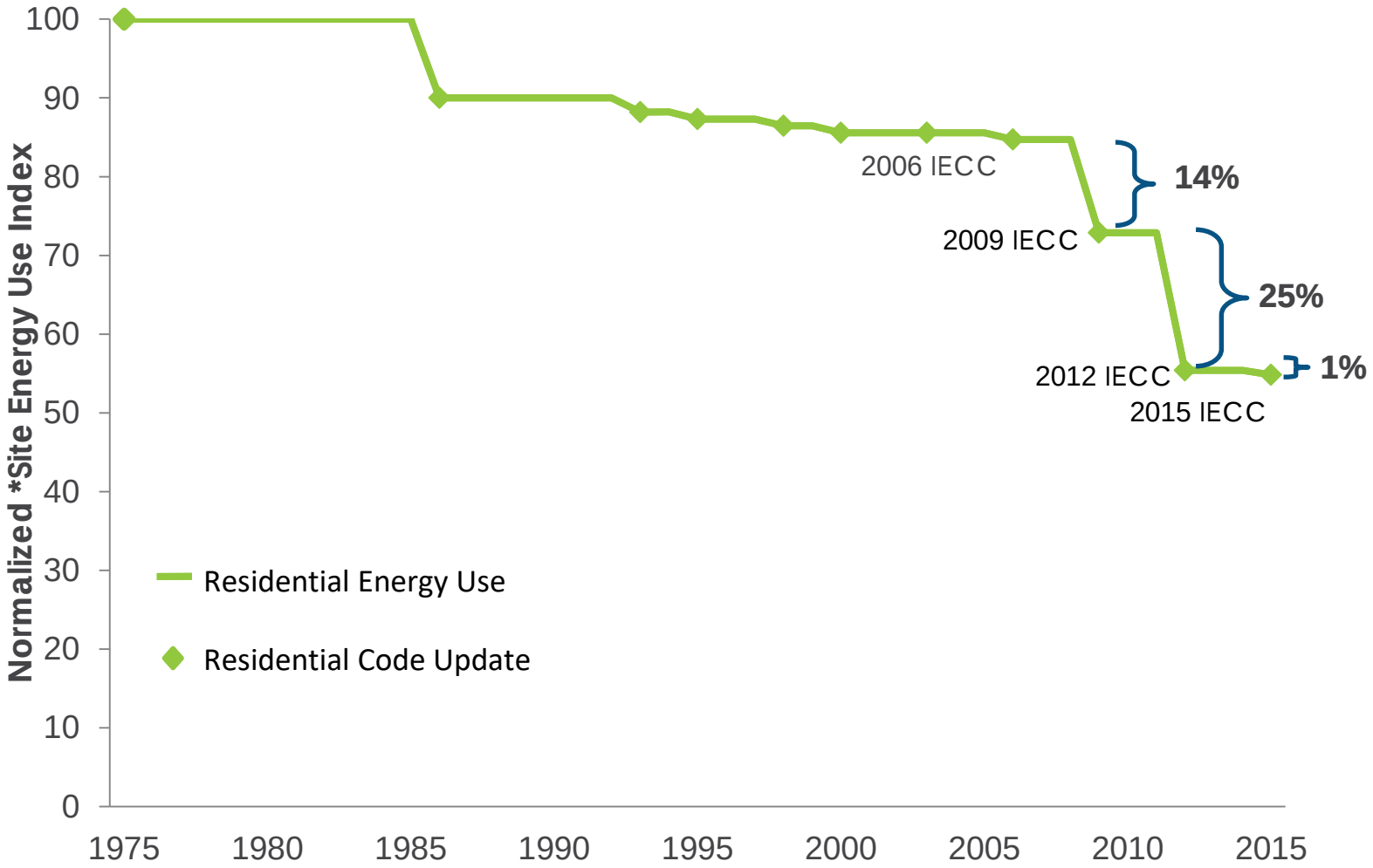
Residential Building Energy Code

Energy Use as Code Improves (1975-2016)



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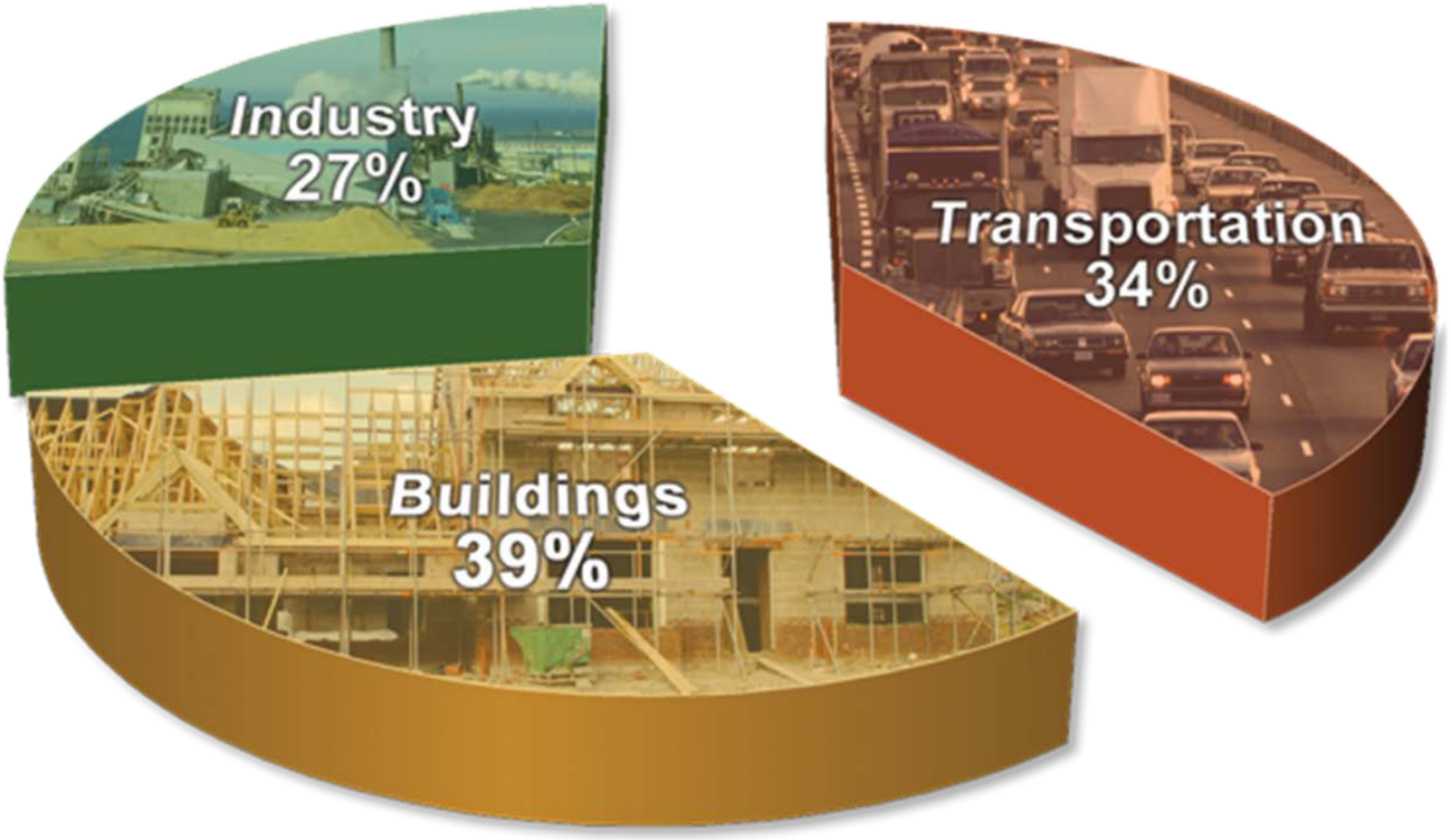
Energy Use by sector

United States



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Why are Codes Important?

- Reduce energy use
- Impacts energy use for the life of a building
  - Improves overall building stock
  - Most cost-effective to implement energy measures during initial design and construction
- Benefits building owners and operators

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What are the benefits?

- Reduce energy costs
  - Homeownership more affordable; Lower operating costs
- Savings accrue over life of building
- Improves occupant comfort and Indoor Air Quality (IAQ)
- More money to invest locally
  - Efficiency upgrades cannot be outsourced

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Code Development

- **Model Energy Codes**
- **ICC Code Process**

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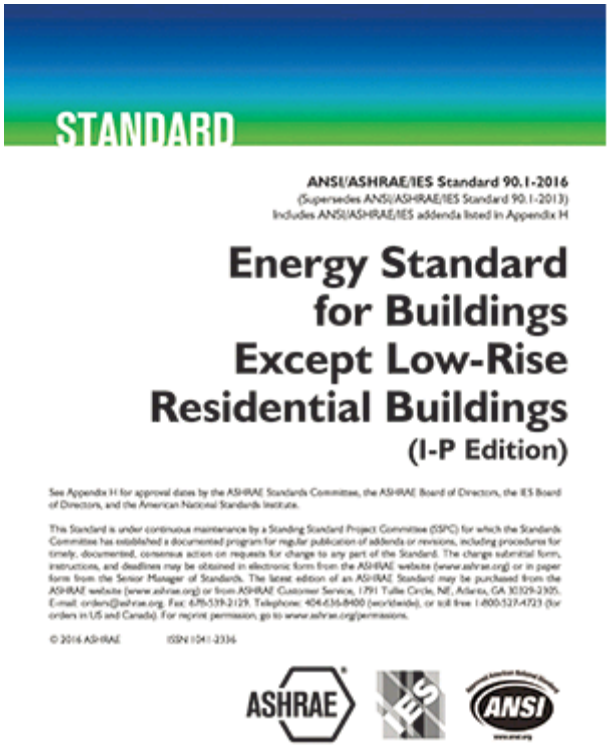
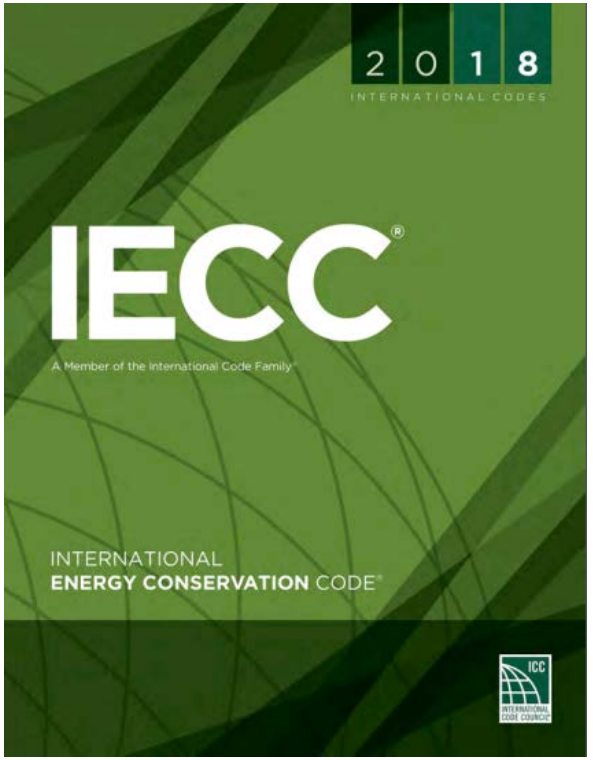
Model Building Energy Codes



ASHRAE Standard 90.1



International Energy Conservation Code

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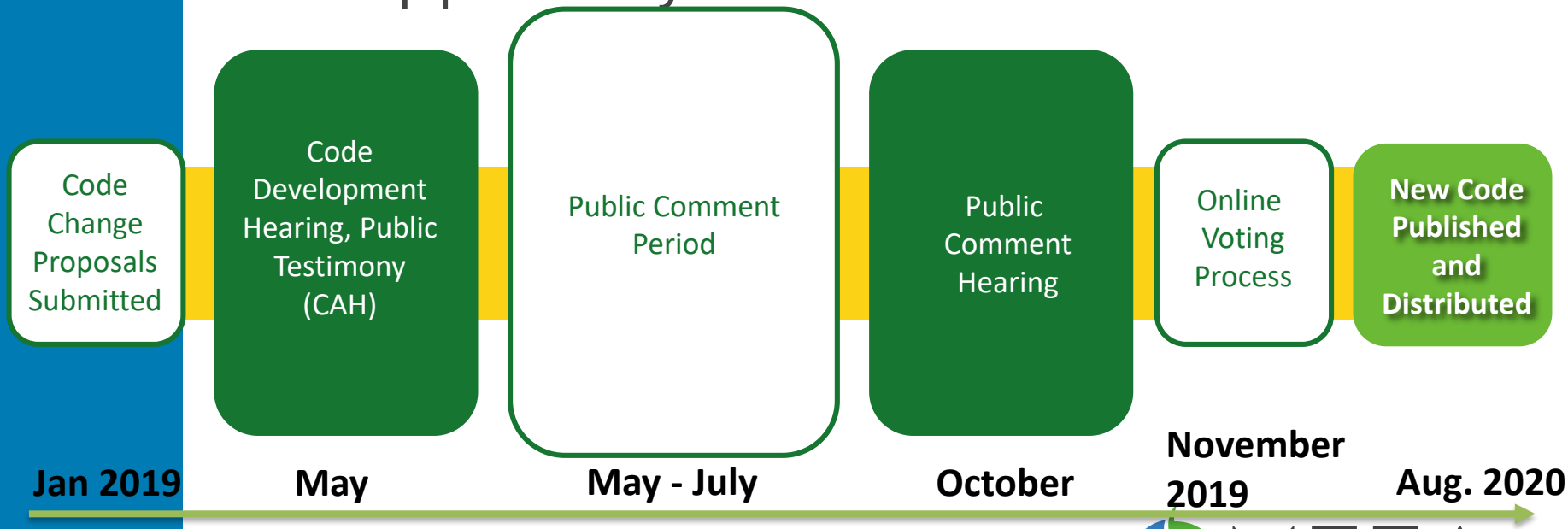
International Code Council

National Code Development Process

- New Code Published Every Three Years
- Amendments Accepted from All Parties
- Proponents and Opponents Given Opportunity to Present Case



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Adoption Process

Michigan

- Michigan Adopts Statewide Codes through an Administrative Process
  - Approval by regulatory agency and legislative committee
- Model codes may be amended
- Typical Stakeholders
  - Code officials (state and local), State Energy Office, builders, architects, engineers, energy advocates, environmental advocates, utilities, manufacturers, construction trades, policymakers, energy raters

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